

WHAT IS CLAIMED IS:

1. A catalyst comprising a support;  
manganese in elemental or combined form; and  
5 one or more elements selected from the group consisting of  
lithium, sodium, potassium, rubidium, caesium, beryllium,  
magnesium, calcium, strontium, barium and zinc in elemental or  
combined form,  
wherein the support has a BET surface area of less than 200 m<sup>2</sup>/g.
- 10 2. A process for producing the catalyst according to Claim 1 comprising the steps of:  
providing a support having a BET surface area of less than 200 m<sup>2</sup>/g;  
impregnating the support with one or more solutions, which taken together  
15 contain manganese and one or more compounds of one or more  
elements selected from the group consisting of lithium, sodium,  
potassium, rubidium, cesium, beryllium, magnesium, calcium,  
strontium, barium and zinc;  
drying the impregnated support; and  
20 calcining the dried support.
3. The catalyst made by the process according to Claim 2.
4. In a process for producing an epoxide from a hydrocarbon comprising  
25 reaction of the hydrocarbon with an oxygen-containing gaseous oxidizing agent in  
the presence of a catalyst, the improvement comprising the catalyst containing  
manganese in elemental or in combined form and containing one or more  
elements selected from the group consisting of lithium, sodium, potassium,  
rubidium, cesium, beryllium, magnesium, calcium, strontium, barium and zinc in  
30 elemental or combined form.

5. The process according to Claim 4, wherein the oxidizing agent is selected from the group consisting of oxygen and nitrogen oxides.